

# PATENT COOPERATION TREATY



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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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	(PCT Article 36 and Rule 70)	
Applicant's or agent's file reference P11039WO	FOR FURTHER ACTION Prelimina	ification of Transmittal of Internation y Examination Report (Form PCT/IPEA/4
International application No. PCT/EP2003/008239	International filing date (day/month/year) 25 July 2003 (25.07.2003)	Priority date (day/month/year) 25 July 2002 (25.07.2002)
International Patent Classification (IPC) or a B21D 45/00	national classification and IPC	
Applicant	WEIGELT, Harald	
Authority and is transmitted to the		
This report is also accomp	sheets, including this coveranted by ANNEXES, i.e., sheets of the describasis for this report and/or sheets containing in 607 of the Administrative Instructions und	iption, claims and/or drawings which have rectifications made before this Authority
These annexes consist of a	total of 4 sheets.	
3. This report contains indications rel	ating to the following items:	
I Basis of the repo	rt	
II Priority		
III Non-establishme	nt of opinion with regard to novelty, inventi	ve step and industrial applicability
IV Lack of unity of		
V Reasoned statem cirations and exp	ent under Article 35(2) with regard to novel lanations supporting such statement	y, mventive step or industrial application.
VI Certain documen	nts cited	
VII Certain defects i	n the international application	
VIII Certain observat	ions on the international application	
• • •		
Date of submission of the demand	Date of complete	on of this report
23 February 2004 (23.	02.2004)	5 October 2004 (15.10.2004)
Name and mailing address of the IPEA/E	P Authorized offic	er

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International application No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT/EP2003/008239

I. Basis of the	e report		
1. This report	t has been drawn o le 14 ars referred to	on the basis of (Replacement slice in this report as "originally filed"	ets which have been furnished to the receiving Office in response to an invitation and are not annexed to the report since they do not contain amendments.):
	the international	application as originally filed.	
	the description,	pages1-22	_, as originally filed,
		pages	, filed with the demand,
		pages	, filed with the letter of,
		pages	, filed with the letter of
×	the claims,	Nos.	, as originally filed,
		Nos.	, as amended under Article 19,
		Nos.	_, filed with the demand,
		Nos. 1-15	, filed with the letter of 13 July 2004 (13.07.2004) ,
		Nos.	, filed with the letter of
	the drawings,	sheets/fig 1/4-4/4	, as originally filed,
		sheets/fig	, filed with the demand,
		sheets/fig	
		sheets/fig	, filed with the letter of-
2. The amend	lments have result	ed in the cancellation of:	
	the description,	pages	-
	the claims,	Nos.	
	the drawings,	sheets/fig	
3. This to go	report has been e beyond the discl	stablished as if (some of) the ar osure as filed, as indicated in th	mendments had not been made, since they have been considered he Supplemental Box (Rule 70.2(c)).
4. Additional	observations, if n	ccessary:	
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International application No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT/EP2003/008239 III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of: the entire international application. claims Nos. because: the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify): the description, claims or drawings (indicate particular elements below) or said claims Nos. \_ are so unclear that no meaningful opinion could be formed (specify): the claims, or said claims Nos. \_\_\_\_\_\_\_by the description that no meaningful opinion could be formed. \_\_\_ are so inadequately supported no international search report has been established for said claims Nos.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT



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V.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					
ı.	Statement					
	Novelty (N)	Claims	1-5,7-15	YES		
		Claims		NO		
	Inventive step (IS)	Claims	1-5,7-15	YES		
		Claims		NO		
	Industrial applicability (IA)	Claims	1-5,7 <b>-</b> 15	YES		
		Claims		NO		

#### 2. Citations and explanations

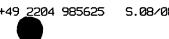
The stripping device known from US-A-2168377 (D1) is regarded as the closest prior art. This stripping device corresponds to the stripping device indicated in the preamble of claim 1 and, furthermore, shows the feature in the characterizing part of claim 1 that an anti-twist device is provided for substantially preventing the stripping element from rotating.

Therefore, the subject matter of claim 1 differs from the known stripping device in that in the anti-twist arrangement the stripping element is asymmetrically paired, in at least one direction, with a hole or an opening in the guide element for inserting the stripping element, in order to ensure that the stripping element is inserted with a one-to-one orientation.

Therefore, the subject matter of independent claim 1 is novel (PCT Article 33(2)).

The problem to be solved by the present invention can be regarded as that of providing improved twist prevention.

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT



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Article 33(3)). None of the documents cited in the search report discloses that in an anti-twist arrangement the stripping element is asymmetrically paired, in at least one direction, with a hole or an opening in the guide element for inserting the stripping element, in order to ensure that the stripping element is inserted with a oneto-one orientation.

Therefore, proceeding from a stripping device according to D1, the prior art contains nothing that suggests a device according to claim 1.

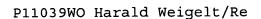
Claims 2-5 and 7-15 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.

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#### New Claims

- A stripping device (3) for use with a cutting tool (1) with a cutting element, in particular a punch (2), for machining a workpiece, in particular a curved metal sheet (6), at least one fastening piece (4, 28, 40) for fastening it to the cutting tool, a spring-elastic element (21) arranged outside the workpiece contact region, a stripping element (15, 34) which comes into contact with the workpiece and surrounds the cutting 10 element (2), and at least one guide element (11, 26, guiding the stripping element (15, 34) provided, characterized in that a device for securing against rotation to essentially prevent the stripping element (15) from rotating is provided, the device for 15 securing against rotation having a pairing, asymmetrically at least in one direction, of stripping element and a hole or an opening in the guide element in which to fit the stripping element so as to ensure 20 that the stripping element will be installed with a unique orientation.
- The stripping device (3) as claimed in claim 1, characterized in that the device for securing against
   rotation comprises a stripping element with an irregular cross-sectional shape.
- The stripping device (3) as claimed in claim 1 or
   characterized in that the device for securing
   against rotation comprises an elongated hole (14) or
   polygonal hole in the guide element.
- 4. The stripping device (3) as claimed in one of the preceding claims, characterized in that an elongated hole having three straight sides (141, 142, 143, 311, 312, 313) and one curved side (144, 314) and a correspondingly designed stripping element (15) are provided.



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5. The stripping device (3) as claimed in one of the preceding claims, characterized in that at least one guide sleeve (11, 26) is arranged as a guide element outside the stripping element (15), at least partially surrounding the latter in a guiding manner, and/or at least one guide bushing (33) is arranged as a guide element within the stripping element (34), guiding the latter.

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- 6. The stripping device (3) as claimed in claim 5, characterized in that instead of the device for securing against rotation in the form of a pairing, formed asymmetrically in at least one direction, of stripping element and hole or opening in the guide element, two fitting shoulder screws (36) are provided for fastening to the cutting tool (1), and a region of the stripping element that surrounds the fitting shoulder screws is provided for engaging round a fastening plate (5) for the punch (2).
- 7. The stripping device (3) as claimed in one of the preceding claims, characterized in that at least one guide surface (19) is provided between stripping element (15) and guide element (11, 26), the length of which surface can be selected as a function of the forces acting on the stripping device, in particular shearing and lateral forces, in order to ensure tilt-free guidance.

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- 8. The stripping device (3) as claimed in claim 7, characterized in that the stripping element (15) has an essentially straight section (17) and a protruding section (18), guide surfaces being provided on the straight and the protruding sections (17, 18) of the stripping element (15).
- 9. The stripping device (3) as claimed in one of the

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preceding claims, characterized in that the stripping element (15, 34) has at least one guide surface on its inside facing a fitted cutting element (2), in particular the stem thereof, and/or the stripping element (15, 34) and the spring-elastic element (21) are oriented, surrounding the cutting element (2), in such a manner that they can be loaded in a manner essentially free from torque.

- 10 10. The stripping device (3) as claimed in one of the preceding claims, characterized in that a lubricant (16), in particular a solid lubricant, is provided at least in a subregion of the straight section (17).
- 15 11. The stripping device (3) as claimed in one of the preceding claims, characterized in that the guide element (26) is formed integrally with the fastening piece (28) or guide element (11) and fastening piece (4) are formed as elements which can be joined together.
  - 12. The stripping device (3) as claimed in one of the preceding claims, characterized in that the spring-elastic element (21) is arranged between stripping element (15) or guide element (33) and cutting tool (1) and/or within the guide element (11, 26).
- 13. The stripping device (3) as claimed in one of the preceding claims, characterized in that at least one protruding region (50) and/or protruding section (51), in particular a claw- or clamp-shaped section, is or are provided on the circumference of the fastening piece (4) for engaging around a fastening device (5) of the cutting tool (1), in particular standardized fastening plate.
  - 14. The stripping device (3) as claimed in one of the preceding claims, characterized in that the stripping

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element (15, 34) can be provided or is provided with a shape corresponding to the workpiece and consists, in particular, of bronze or another material which can be machined and matched to the shape of the workpiece surface.

15. The stripping device (3) as claimed in one of the preceding claims, characterized in that the spring-elastic element (21) is a rubber spring or consists of another spring-elastic, restoring or flexible material.

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